

# Environmental Satellite Data Annex

to the  
Memorandum of Agreement  
on  
Data Acquisition Processing and Exchange

**UNCOORDINATED DRAFT**

**V4.1  
10.22.15**

Committee for Operational Processing Centers  
(COPC)

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Director, NOAA/NESDIS/ OSPO

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Dr. William Lapenta  
Director, NOAA/NWS/NCEP

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Air Force

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CAPT Russell Smith  
Commanding Officer, Fleet Numerical Meteorology and  
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CAPT A. J. Reiss  
Commanding Officer, Naval Oceanographic Office

Date

## 1.0 INTRODUCTION

This Environmental Satellite Data Annex (ESDA) to the tri-agency Memorandum of Agreement on Data Acquisition, Processing and Exchange (DAPE MOA) facilitates cooperative acquisition, processing, and exchange activities among the participants for data derived from Department of Defense (DoD), Department of Commerce (DoC), National Aeronautics and Space Administration (NASA), and foreign environmental satellite systems.

## 2.0 SCOPE AND PURPOSE

The cooperative framework established by this ESDA enables the participants to achieve and implement the most cost-effective and efficient means of sharing environmental satellite data and products. This ESDA describes the cooperative processes and procedures for conducting environmental satellite data acquisition, processing and exchange operations between the Operational Processing Centers (OPCs) and it provides more detail to the structure and responsibilities that are promulgated in the DAPE MOA.

## 3.0 PARTICIPANTS

The three main Parties, as reflected in the DAPE MOA, are NOAA, the Department of the Navy and the Department of the Air Force. Within these organizations, the management and operation of environmental satellite data acquisition, processing and exchange are performed by the five participating Operational Processing Centers as follows:

- NOAA:
  - National Environmental Satellite, Data, and Information Service (NESDIS), Office of Satellite and Product Operations (OSPO)
  - and National Weather Service (NWS)/National Centers for Environmental Prediction (NCEP)
- Navy: under the Commander, Naval Meteorology and Oceanography Command (CNMOC).
  - Fleet Numerical Meteorology and Oceanography Center (FNMOC)
  - and the Naval Oceanographic Office (NAVOCEANO)
- Air Force: under the Air Combat Command (ACC)
  - 557<sup>th</sup> Weather Wing (557WW)

The Joint Center for Satellite Data Assimilation (JCSDA), being a partnership between the three main parties (NOAA, Navy, Air Force) in addition to NASA, is also an active participant in data acquisition requirements and processing.

## 4.0 AUTHORITIES

4.1 NOAA/NESDIS and NOAA/NWS have authority to enter this agreement under: [\(a\) 15 U.S.C. § 313, the National Weather Service organic authority; 16 U.S.C. § 1456, the Coastal Zone Management Act; and 15 U.S.C. § 2901, which establishes a National Climate Program;](#)

b) 115 U.S.C. § 1525, the Department's Joint Project Authority, which provides that the Department may enter into joint projects with non-profit, research, or public organizations on matters of mutual interest, the cost of which is equitably apportioned.

~~the Economy Act of 1932, which as amended, 31 U.S.C. Section 1535 permits Federal Government agencies to purchase goods or services from other Federal Government agencies or other major organizational units within the same agency. An Economy Act purchase is permitted only if: (1) amounts for the purchase are actually available, (2) the purchase is in the best interest of the Government, (3) the ordered goods or services cannot be provided by contract from a commercial enterprise, i.e., the private sector, as conveniently or cheaply as could be by the Government, and (4) the agency or unit to fill the order is able to provide or get by contract the ordered goods or services.~~

**Comment [DB1]:** These are the authorities from the DAPE. Economy Act does not give programmatic authority. It is a statutory authority to transfer funds.

4.2 The ~~USAF~~ Air Force has authority to enter this agreement under the Department of Defense Instruction 4000.19, Interservice and Intergovernmental Support.

**Comment [DB2]:** USAF and USN are not used elsewhere in the document

4.3 The ~~USN~~ Navy has the authority to enter this agreement under 10 USC Section 5013, Secretary of the Navy.

## 5.0 ROLES AND RESPONSIBILITIES

### 5.1 Committee for Operational Processing Centers (COPC)

The COPC, consisting of the directors of the OPCs, approves and implements the ESDA under the provisions of the Federal Plan for Cooperative Support and Backup Among Operational Processing Centers, the COPC Terms of Reference, and the DAPE MOA.

### 5.2 Working Group for Cooperative Support and Back-up (WG/CSAB)

The WG/CSAB provides oversight of normal, ongoing operations described in this annex, resolves problems/issues raised by Working Group for Observational Data (WG/OD), and implements direction received from the COPC under the provisions of the Federal Plan for Cooperative Support and Backup, the WG/CSAB Terms of Reference, and the DAPE MOA. The CSAB also:

- Ensures that the ESDA is prepared and maintained.
- Approves technical references to this annex.

The NESDIS member of the WG/CSAB prepares and coordinates funding estimates for environmental satellite data exchange as described in paragraph 5.7 below.

### 5.3 Working Group for Observational Data (WG/OD)

The WG/OD, under the provisions of the WG/OD Terms of Reference and the DAPE MOA, is responsible for coordination and implementation of cooperative strategies as tasked by the WG/CSAB. Key responsibilities include:

- Preparing and maintaining ESDA documentation.
- Coordinating satellite data day-to-day operations, common procedures, and the implementation of approved changes and improvements.
- Communicating interagency matters (independently and through the processes and proceedings of the WG/OD).
- Coordinating the technical and administrative aspects of data exchange.

### 5.4 Joint Action Group for Centralized Communication Management (JAG/CCM)

The JAG/CCM, under the provisions of the JAG/CCM Terms of Reference and the DAPE MOA, is responsible for coordination of communications issues between the OPCs. Key responsibilities include:

- Monitoring the effectiveness of communications.
- Forward projection of capability needs.

#### **5.5 [Suomi-National Polar-orbiting Partnership/Joint Polar Satellite System \(S-NPP/JPSS\) Data Access for 557WW](#)**

See appendix B

#### **5.8 S-NPP/JPSS Data Access for Navy**

NOAA and the Navy have entered into discussions to document how NOAA will provide S-NPP/JPSS data to the Navy. Once complete, the cooperation will be included as an appendix to this document.

#### **5.6 Administration.**

Support contractor(s) may be jointly hired to assist with support documentation and the performance of technical duties related to the exchange of data described in this annex. NOAA/NESDIS will issue the support contract, serve as the lead contract administrator for Support Documentation, and coordinate the contracting efforts. NOAA/NESDIS/OSPO will act as the focal point for technical services, preparing and maintaining technical references, and operation of jointly procured hardware located at NOAA/NESDIS/OSPO.

#### **5.7 Funding**

Requests for funding and tri-agency cost sharing recommendations will be submitted annually to the COPC for approval. Requests for funding for specific Agency-to-Agency support arrangements will be made directly from the Servicing Agency to the Requesting Agency. Funding requirements will include shared costs for hardware, software and human resources needed to maintain, document, and facilitate the exchange of scientific data, products and related information. Specific annual funding information is reflected in **Appendix A** of this annex and includes a 5-year budget projection.

### **6.0 PROCESSES AND PROCEDURES**

#### **6.1 Environmental Satellite Data Operations Technical Reference (TR-1)**

TR-1 is the primary technical reference for this annex. It contains a master list of the data, products, and services transmitted by each OPC. It describes the allocation of data products and services, data formats, and communications specifications. It is maintained and routinely updated by NOAA/NESDIS/OSDPD for official use only.

Comment [WH3]: Confirm acronym

#### **6.2 Standards.**

Successful environmental satellite data acquisition, processing, and exchange activities among the OPCs relies on cooperation and collaboration. OPCs have both common and unique missions and capabilities and they contribute unique products and services to partners and users.

These products and services are subject to change based on OPC mission and operational requirements. Users of these products and services rely upon long-term, assured capability and quality. To achieve these standards, each OPC will strive to meet the following goals:

- Provide products and services in a timely manner and implement improvements to meet customer requirements.
- Participate in the development of data and products from future satellite systems. The operational product expertise at each OPC is an invaluable capability to draw upon for successful exploitation of data from future satellite systems.
- Communicate requirements to the appropriate OPC
- Use OPC products, when feasible, to achieve efficient and cost effective customer support and avoid redundancies.

### **6.3 System and Data Product Interface Compatibility**

The OPCs have diverse primary missions and internal data processing and communications systems that also support missions not related to this annex. Data and products will be exchanged via communications systems agreed to by the COPC and the OPCs will cooperate to achieve the most cost-effective means of sharing data and products. Systems interface compatibility shall be closely managed using generally accepted government and industry standards for configuration management (CM). The CM responsibilities for satellite data operations are as follows:

- The CSAB is charged with the responsibility to ensure that operational integrity, reliability of performance, and timeliness of data transfers are maintained.
- The JAG/CCM has purview for communications planning.

### **6.4 Data and Product Compatibility**

The CSAB will charter and convene expert panels on an as required basis to review ESDA changes for technical and scientific merit and operational benefit and based on OPC recommendations. The COPC will approve panel charters and memberships.

### **6.5 Data Redistribution and Archiving**

Use or exchange of near real-time data or products is subject to the provisions of this annex and other applicable agreements. Users of these data or products shall provide appropriate attribution of data sources. Responsibilities for data redistribution and archiving are as follows:

- NOAA/NESDIS and NCEP will respond to civilian user requests for data.
- 557WW, FNMOC, and NAVOCEANO will respond to military user requests for satellite data.
- The WG/OD representative will be the focal point for product requirements and coordination.
- NOAA will archive data as agreed to by the participants to this Annex.

### **6.6 OPC Backup**

Procedures for satellite data operations will be coordinated and documented as separate agreements between the OPCs on an as-required basis.

**7. PERSONNEL:** Each Party is responsible for all costs of its personnel, including pay, benefits, and travel. Each party is responsible for supervision and management of its personnel.

## 8. GENERAL PROVISIONS:

**8.1. Review of Annex:** The annex will be reviewed by all Parties annually on or around the anniversary of its effective date for financial impacts and triennially in its entirety.

**8.2. Modification of Annex:** This annex may only be modified by the written agreement of all Parties, duly signed by their authorized representatives.

**8.3. Disputes:** ~~Should disagreements arise on the interpretation of the provisions of this annex and/or revisions thereto, that cannot be resolved at the operating level, the area(s) of disagreement shall be stated in writing by each party and presented to the other party for consideration. If agreement or interpretation is not reached within 30 days, the parties shall forward the written presentation of the disagreement to respective higher officials for appropriate resolution. If a dispute related to funding remains unresolved for more than 30 calendar days after the parties have engaged in an escalation of the dispute, disputes will be resolved pursuant to the provision of the "Intragovernmental Business Rules" delineated in the Treasury's Financial Manual, Vol. 1., Bulletin 2011-04, Section VII (Resolving Intragovernmental Disputes and Major Differences (November 8, 2010)), or superseding guidance. Any disputes relating to the annex will, subject to any applicable law, Executive Order, Directive, or Instruction, be resolved by consultation between the Parties or in accordance with DoDI 4000.19.~~

**Comment [DB4]:** This is language that DOC GC uses in NOAA agreements

**8.4. Termination of Agreement:** This annex may be terminated by ~~either any~~ Party by giving at least 180 days written notice to the other Parties. This annex may also be terminated at any time upon the mutual consent of the Parties.

**8.5. Transferability:** This annex is not transferable except with the written consent of the Parties.

**8.6. Entire Agreement:** It is expressly understood and agreed that this annex embodies the entire agreement between the Parties regarding the annex's subject matter.

**8.7. Effective Date:** This annex takes effect beginning on the day after the last Party signs.

**8.8. Expiration Date:** This annex expires on 30 Sep 2020.

## APPENDIX A

### FIVE YEAR FUNDING PROJECTIONS

The following funding projections are for planning purposes only and are subject to change in accordance with provisions of the DAPE MOA.

1. Shared recurring costs for data transfers from the DAPE Gateway server hosted at NESDIS

FY:	2016	2017	2018	2019	2020
Technical Services*	\$115.6K	\$119.2K	\$122.9K	\$126.8K	\$130.8K

\* NOAA/NESDIS, Navy (CNMOC), and Air Force (557WW) individual agency contribution

For the DAPE Gateway Service and related Technical Services, including:

- Testing and implementation of new products; maintenance and trouble-shooting of data transfer problems among the OPCs; weekly reporting on overall data transfer effectiveness.
- Maintenance of technical reference documentation describing products and or formats to be delivered; configuration management tasks including updating and maintaining the technical references, tracking and updating action items as assigned by the WG/OD, and maintaining frequent contacts with all partners to quickly resolve DoD/NOAA data processing or distribution issues.



## APPENDIX B

### S-NPP/JPSS Data Access for 557 WW

B.1 557 WW, as the Requesting Agency, shall:

- Reimburse NESDIS for costs associated with making data available to 557 WW from the Suomi National Polar-orbiting Partnership (S-NPP) and the Joint Polar Satellite System (JPSS) satellites. This includes hardware and software required to make these data available to 557 WW.
- Be responsible for the communication costs for delivery of the data from the DoD point of presence (POP) to 557 WW.
- Be prepared to transition from the current Block 1.2 Interface Data Processing (IDP) configuration at NESDIS's Satellite Operations Facility (NSOF) to distribution via the NESDIS S-NPP Data Exploitation 2.0 /Product Distribution and Access (NDE 2.0/PDA) system by the PDA Transition to Operations (TTO) date (currently ~~Jan 2016~~ 3Q FY2016) or the NESDIS Network Adapter Box (NAB).
- Be responsible for storage costs of S-NPP/JPSS data at 557 WW.
- Be responsible for costs associated with Computer Processing Unit (CPU) and memory resources needed for 557 WW to receive, process, and distribute S-NPP/JPSS data.
- Reimburse NESDIS for refresh of hardware and software every five years after installation of initial equipment.

**Comment [WH5]:** This date in reality is TBD, but for the document, we can designate a FY quarter.

B.2 NESDIS, as the Servicing Agency, shall:

- Make all required/subscribed S-NPP/JPSS xDRs and Intermediate Products (IPs), compressed using gzip compression, available to 557 WW. The compression will be performed by the NESDIS IDP.
- Provide agreed upon S-NPP/JPSS data products to 557 WW. The list of available products is in the JPSS Level 1 Requirements Document Supplement and the NOAA Unique Products (NUPs).
- Continue IDP Block 1.2 production and dissemination of products to 557 WW from NSOF until 557 WW has successfully transitioned to receipt of S-NPP/JPSS data from NDE 2.0/PDA following the successfully PDA TTO date (currently ~~Jan 2016~~ 3Q FY2016) or the NESDIS Network Adapter Box (NAB).
- Transition 557 WW from the NESDIS Block 1.2 IDP to operational receipt of compressed S-NPP/JPSS data from NDE 2.0/PDA following the successfully PDA TTO date, (currently ~~Jan 2016~~ 3Q FY2016).
- Utilize the NOAA Consolidated Back-Up (CBU) Facility in Fairmont, West Virginia, for NDE 2.0/PDA product generation and distribution for S-NPP/JPSS data during NESDIS Continuity of Operations (COOP) events.

**Comment [WH6]:** All products are in the L1RDS. By removing the IDPS I/F, there is not a need to distinguish from IDPS and NDE generated products.

**APPENDIX B (cont)**

Five Year Funding Projections for

NESDIS Product Distribution and Access (PDA) System Augmentation  
supporting S-NPP/JPSS Data Access for 557 WW

<u>Stand-up Costs to 557WW (FY 2016 only)</u>	<u>NSOF Ops</u>	<u>NSOF I&amp;T</u>	<u>CBU</u>	<u>Total</u>
Hardware	\$ 250K	\$ 250K	\$ 250K	\$ 750K
Software	\$ 35K	\$ 35K	\$ 35K	\$ 105K
Labor	\$ 288K	-	\$ 144K	\$ 432K
<b>Total</b>	<b>\$ 573K</b>	<b>\$ 285K</b>	<b>\$ 429K</b>	<b>\$ 1,287K</b>

<b>FY:</b>	2016	2017	2018	2019	2020
Recurring <u>Costs to 557WW (per environment)</u>					
Hardware	\$50K	\$51.5K	53.045K	\$54.636K	\$250K
Software	\$7K	\$7.21K	\$7.426K	\$7.649K	\$39.393K
Overhead	\$8.55K	\$8.807K	\$9.071	\$9.343K	\$43.409K
Sub-Total	\$65.55K	\$67.515K	\$69.542K	\$71.628K	\$332.802K
NSOF Ops	\$65.55K	\$67.515K	\$69.542K	\$71.628K	\$332.802K
NSOF I&T	\$65.55K	\$67.515K	\$69.542K	\$71.628K	\$332.802K
CBU	\$65.55K	\$67.515K	\$69.542K	\$71.628K	\$332.802K
<b>TOTAL RECURRING</b>	<b>\$196.650K</b>	<b>\$202.550K</b>	<b>\$208.626K</b>	<b>\$214.885K</b>	<b>\$998.405K</b>

## APPENDIX C

### REFERENCES AND ACRONYM DEFINITIONS

#### C.1 References

Data Acquisition, Processing, and Exchange Memorandum of Agreement, available from the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM)

Federal Plan for Cooperative Support and Backup among Operational Processing Centers, available from the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM)

Committee for Operational Processing Centers Terms of Reference, available from the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM)

Working Group for Cooperative Support and Backup Terms of Reference, available from the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM)

Working Group for Observational Data Terms of Reference, available from the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM)

Joint Action Group for Centralized Communications Management Terms of Reference, available from the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM)

Environmental Satellite Data Operations Technical Reference 1 (TR-1), available from NOAA/NESDIS/OSPO, for official use only.

#### C.2 Acronym Definitions

557WW	Air Force Weather Agency
CM	Configuration Management
CNMOC	Commander, Naval Meteorology and Oceanography Command
COPC	Committee for Operational Processing Centers
DAPE	Data Acquisition, Processing, and Exchange

DoC	Department of Commerce
DoD	Department of Defense
ESDA	Environmental Satellite Data Annex
FNMOCC	Fleet Numerical Meteorology and Oceanography Center
FY	Fiscal Year
JAG/CCM	Joint Action Group for Centralized Communication Management
WG/OD	Working Group for Observational Data
K	Thousands
MOA	Memorandum of Agreement
NASA	National Aeronautics and Space Administration
NAVOCEANO	Naval Oceanographic Office
NCEP	National Centers for Environmental Prediction
NESDIS	National Environmental Satellite, Data, and Information Service
NOAA	National Oceanic and Atmospheric Administration
NPP	<del>NPOESS Preparatory Project</del> <a href="#">Suomi National Polar-Orbiting Partnership</a>
NWS	National Weather Service
OFCM	Office of the Federal Coordinator for Meteorological Services and Supporting Research
OPC	Operational Processing Center
OSPO	Office of Satellite and Product Operations
TR-1	Environmental Satellite Data Operations Technical Reference (formerly known as the SPP POM). It is a technical reference document to the ESDA
WG/CSAB	Working Group for Cooperative Support and Backup